



February 29, 2008

Via electronic mail

Executive Officer and Members of the Board
California Regional Water Quality Control Board
San Francisco Region
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***Re: Comments on December 14, 2007, Draft San Francisco Bay Municipal
Regional Stormwater NPDES Permit***

Dear Mr. Wolfe and Members of the Board:

We write on behalf of the Natural Resources Defense Council (NRDC) and San Francisco Baykeeper. We have reviewed Tentative Order R2-2008-XXXX, NPDES Permit No. CAS612008—the latest draft of the Municipal Regional Stormwater NPDES Permit (“Draft Permit”) for the San Francisco Bay region, as updated on December 14, 2007—and submit the following comments regarding the critical issue of controlling polluted runoff through restrictions on new development and redevelopment.¹

As a general matter, protecting the abundant and exceptional water resources in the San Francisco Bay area requires a municipal stormwater permit that imposes control measures to the maximum extent practicable (“MEP”) and ensures compliance with water quality standards. More specifically, protecting the area’s beneficial uses requires adequate, ascertainable controls on runoff rate, volume, and quality from new development and redevelopment projects. The Draft Permit, however, currently fails to include the necessary performance standards that would enable it to accomplish these objectives. Instead, many of the Draft Permit’s provisions are vague prescriptions that offer the Regional Board and the public no assurance that controls meeting MEP and water quality standards will be implemented.

¹ We join San Francisco Baykeeper’s comment letter dated February 29, 2008 regarding the Draft Permit.

With these concerns in mind, we met with Board staff in January. We appreciated Board staff's attentiveness to our concerns at this meeting, and we hope that our comments and discussion will generate the necessary permit revisions.

I. Introduction and Summary

A. The San Francisco Bay Area Contains Exceptional Natural Resources That Have Been and Continue To Be Harmed by Rapid Development.

The inadequacies of the Draft Permit threaten to further degrade some of the most spectacular watersheds in California. San Francisco Bay itself is "the largest estuary on the Pacific Coast[,] making it one of the world's great natural resources."² Like estuaries across the planet, San Francisco Bay contains outstanding biodiversity and provides critical habitat for countless animals. The Bay is a singularly important resource in California:

Hundreds of thousands of birds migrating between the Arctic and South America—fully 50 percent of the birds using the Pacific flyway—rest and feed on the Bay. Over a million birds visit the Bay each year. The Suisun Marsh, which alone comprises almost ten percent of the remaining natural wetlands in California, is a particularly valuable habitat and is critically important to waterfowl during droughts. The Bay supports over 130 species of fish, including salmon and other anadromous fish, which spend most of their lives in the ocean but return to fresh water to reproduce. Harbor seals, gulls, sea bass, geese, and thousands of other species of fish, plants, mammals, reptiles, and birds [also] thrive in the San Francisco Bay estuary.³

Unfortunately, this irreplaceable resource is acutely suffering from the effects of contaminated stormwater runoff. Indeed, untreated urban and agricultural runoff constitutes the greatest source of pollution in the Bay.⁴ This is exactly the problem that the Draft Permit needs to, but does not yet adequately, address.

The necessity of issuing a strong MS4 permit is underscored by the fact that the San Francisco Bay area already confronts many water quality impairments due to development and urban runoff. The region has seen a rapid expansion of residential

² San Francisco Bay Conservation and Development Commission, "The Bay and BCD," at <http://www.bcdc.ca.gov/index.php?cat=19>. All articles and reports, except for those produced by the Regional Board or State Water Board, cited to in this comment letter have been submitted to the Board either in hard copy or on a compact disk (previously submitted to the Board in connection with our July 12, 2007 comment letter). Where also available on the internet, we have provided the link.

³ *Id.*

⁴ San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan, at 11, available at <http://www.bcdc.ca.gov/index.php?p=633&more=1&page=11>.

construction within the past thirty years⁵; indeed, over 20,000 acres of open land were developed around the Bay in just a few recent years, between 1994 and 1998.⁶ Development has led to adverse impacts from increased impervious surface, storm water pollution, and changes to stream channels, hydrographs, and riparian zones.⁷ It has also led to a 90% loss of seasonal wetlands and an 80% loss of tidal marshes around San Francisco Bay.⁸ Further, there are 60 listings on the 303(d) impaired water bodies list for Region 2 that designate urban runoff as a potential source of impairment.⁹

Although the San Francisco Bay area is already highly urbanized, greenfield development and urban infill and redevelopment continue to add impervious cover while the region's population continues to grow quickly, exacerbating current water quality impairments. According to population projections, the San Francisco Bay area will gain another 1.7 million residents by 2030.¹⁰ In the next six years alone, the region needs to add a minimum of 214,500 housing units.¹¹ These intense population pressures put over 400,000 acres of open space at risk of development, and much of this land comes within the jurisdiction of the Draft Permit, including 26,100 acres in Alameda County; 82,200 acres in Contra Costa County; 75,300 acres in Santa Clara County; 10,200 acres in San Mateo County; and 93,300 acres in Solano County, with Fairfield at the center of

⁵ San Francisco Bay Regional Water Quality Control Board, *Watershed Management Initiative*, Integrated Plan Chapter (Oct. 2004), at ES-2.

⁶ National Wildlife Federation, *Paving Paradise: Sprawl's Impact on Wildlife and Wild Places in California* (Feb. 2001), at 5, available at http://www.waterrights.ca.gov/IID/IIDHearingData/LocalPublish/NWF_Exhibit_13.pdf.

⁷ San Francisco Bay Regional Water Quality Control Board, *Watershed Management Initiative*, Integrated Plan Chapter (Oct. 2004), at ES-2, available at <http://www.swrcb.ca.gov/rwqcb2/download/WMI%202004%20Executive%20Summary.pdf>.

⁸ National Wildlife Federation, *Paving Paradise: Sprawl's Impact on Wildlife and Wild Places in California* (Feb. 2001), at 7.

⁹ 2006 CWA Section 303(d) List of Water Quality Limited Segments, available at http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/final/r2_final303dlist.pdf; 2006 CWA Section 303(d) List of Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs, available at http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/final/statetcl_final303d.pdf.

¹⁰ Greenbelt Alliance, *At Risk: the Bay Area Greenbelt* (2006), at 3.

¹¹ Association of Bay Area Governments, "Latest News," at <http://www.abag.ca.gov/planning/housingneeds>.

expected development.¹² Given existing impairments and the expected population growth of the San Francisco Bay area, stronger requirements for the New Development and Redevelopment section of the Draft Permit are more critical than ever.

B. The Draft Permit's Failure to Contain Specific Controls Will Prevent the Permit from Protecting Water Resources.

Most stormwater runoff results from the hydrological modifications that accompany development.¹³ When pervious ground cover is converted to impervious surfaces such as streets, sidewalks, and rooftops, the natural infiltration capacity of the land is diminished significantly or lost entirely. After this conversion has occurred, stormwater runoff leaves developed sites with considerably greater volume, velocity, and peak flows, compared to pre-development conditions. One study in the East San Francisco Bay Hills found that minor increases in imperviousness (around 1%) can result in early season storm flow peak increases up to an order of magnitude above normal.¹⁴

Increased runoff flows pick up proportionally higher levels of car wastes, pet wastes, pesticides, and trash, and carry them to receiving waters, resulting in significant water quality problems. Such runoff continues to present a significant barrier to the attainment of water quality standards. Indeed, EPA has noted that “[s]tormwater has been identified as one of the leading sources of pollution for all waterbody types in the United States. Furthermore, the impacts of stormwater pollution are not static; they usually increase with more development and urbanization.”¹⁵

¹² Association of Bay Area Governments, *A Place to Call Home: Housing in the San Francisco Bay Area* (2007), at 7; Greenbelt Alliance, *At Risk: the Bay Area Greenbelt* (2006), at 4, 25.

¹³ EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (Dec. 2007), at 1, available at <http://www.epa.gov/owow/nps/lid/costs07/documents/reducingstormwatercosts.pdf>; Michael Mallin, *Wading in Waste*, Scientific American (June 2006), at 54-56; NRDC, *Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows* (2006) at 2.2-2.5; GAO, *Better Data and Evaluation of Urban Runoff Programs Needed to Assess Effectiveness* (June 2001), at 4, 12-13; U.S. EPA *Preliminary Data Summary of Urban Storm Water Best Management Strategies* (Aug. 1999), at 85; NRDC, *Stormwater Strategies: Community Responses to Runoff Pollution* (1999).

¹⁴ Brown, S., et al., “Urban Effects on Stream Hydrology and Geomorphology: Variations, Magnitudes and Implications for Stream Protection and Restoration,” presented at the American Geophysical Union’s Fall Meeting (2007), abstract #H52D-01.

¹⁵ EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (Dec. 2007), at 1.

In the Draft Permit, the lack of enforceable standards to control stormwater runoff pollution will allow development to further degrade the watersheds around San Francisco Bay, as well as the Bay itself. Achieving water quality goals “will require the use of site design approaches and LID [low-impact development] [to] limit stormwater generation and maximize natural hydrologic processes for treatment.”¹⁶ While the Draft Permit contains some of these concepts, it does not translate the concepts into objective performance measures or actual controls that will meet the MEP standard or otherwise ensure compliance with water quality standards. Specifically, the following objective criteria represent the MEP standard and should be included in the Permit:

- A standard of 3% maximum allowable Effective Impervious Area (“EIA”) in all Regulated Projects, with a narrowly crafted alternative compliance provision for developments where severe site constraints, such as non-infiltrative soils, render compliance with the 3% EIA limitation impossible;
- A hydromodification standard that post-development peak flow rates and volumes shall not exceed the modeled peak flow rates and volumes of pre-European-settlement native land cover for all storms from the channel-forming event to the 100-year frequency stream flow.

II. The Draft Permit’s Low-Impact Development (“LID”) Site Design Provisions Are Vague and Indefinite.

Taken as a whole, the Draft Permit’s LID provisions set forth only general design recommendations that fail to specify the level of control required, contrary to law. These provisions do not make clear how and to what extent the few LID techniques described must be implemented by Permittees. The nebulous language of these provisions renders them unenforceable and therefore effectively meaningless. The following sections illustrate this problem:

- The Draft Permit requires that Regulated Projects “[c]onserve natural areas, to the extent feasible.” (Draft Permit ¶ C.3.c.i(2)(a).) “Feasibility,” however, is an open-ended concept that allows for wide variation among Permittees and individual developers.
- The Draft Permit requires that Regulated Projects “minimize [their] impervious footprint.” (Draft Permit ¶ C.3.c.i(2)(b).) Without any objective standard, though, Permittees have no way to determine what constitutes “minimization.” Anything less than 100% impervious cover could be construed as “minimization.” Thus, nothing prevents a Permittee

¹⁶ State Water Resources Control Board, *A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption* (Dec. 2007), at 22.

from adopting a *de minimis* reduction that fails to reduce pollutants to the maximum extent practicable.

- The Draft Permit requires that Regulated Projects “[d]rain a portion of impervious areas . . . into pervious areas before discharging to the storm drain.” (Draft Permit ¶ C.3.c.i(2)(d)(i).) “A portion” means only that each Regulated Project must filter some part of stormwater discharge less than the whole—theoretically, any number from 1% to 99% can meet the standard. As little as one drop of runoff could be treated onsite, while the remainder could be discharged through the MS4 system.
- The Draft Permit requires that Regulated Projects “with low traffic areas and appropriate soil conditions[] construct a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces.” (Draft Permit ¶ C.3.c.i(2)(e).) Again, what qualifies as “a portion?”

As explained below, provisions like these are flawed for several reasons: they do not constitute the “control” measures required by law; they will not reduce stormwater to the maximum extent practicable; and they cannot ensure the attainment of water quality standards.

A. The Draft Permit’s Site Design Provisions Cannot Be Considered “Best Management Practices” Under the Clean Water Act.

40 C.F.R. § 122.2 defines the term “best management practices” as:

Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.”

The words “practice” and “procedure” both connote a specific method or means of action, rather than an indefinite act. The list of site design requirements in Section C.3.c.i(2), on the other hand, fails to describe specific actions or procedures. These provisions, mentioned above, merely establish general goals: “[c]onserve natural areas;” “[m]inimize the impervious footprint of the Regulated Project;” “[m]inimize disturbances to natural drainages;” “[d]rain a portion of impervious areas into pervious areas before discharging to the storm drain;” “[p]roperly design and construct pervious areas to effectively receive and infiltrate or treat runoff from impervious areas;” “construct a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces.” (Draft Permit ¶ C.3.c.i(2).)¹⁷

¹⁷ By contrast, there are many LID BMPs that the Draft Permit could require—for example, vegetated roofs, bioswales, cisterns and rain barrels, splash blocks, etc.

As drafted, the site design provisions are no more than broad objectives, and they are not connected with specific performance standards that would enable the Regional Board or the public to assess whether the BMPs implemented at Regulated Projects comply with federal and state laws. This is legally insufficient because the Draft Permit's language fails to articulate with any meaningful level of detail the acts expected of each Permittee, and thus the requirements of the Draft Permit do not meet the definition of a "BMP" pursuant to federal regulations. Rather, the Draft Permit, at most, sets forth ideas around which a proposed management program and articulated BMPs could be developed, as is required in the *application* for an MS4 permit. (See 40 C.F.R. § 122.26.) Missing are the actual BMPs and accompanying performance standards that must be described in the Draft Permit.

EPA guidance unambiguously reinforces the conclusion that BMP design under the NPDES permit program requires the inclusion of measurable goals "that quantify the progress of program implementation and the performance of [Permittees'] BMPs."¹⁸ Generally, "considerable deference" must be extended "to an administrative agency's interpretation of its own regulations," and thus EPA's guidance interpreting the requirements of NPDES permits "is entitled to great weight unless unauthorized or clearly erroneous." (*Communities for a Better Environment v. State Water Resources Control Board*, 109 Cal.App.4th 1089, 1107 (2003).) EPA "strongly recommends" that, among other components, measurable goals include "a quantifiable target to measure progress toward achieving the activity or BMP."¹⁹ This requirement for quantifiable BMP targets is further clarified in EPA's examples of BMPs and associated measurable goals. These examples clearly demonstrate that the development provisions in the Draft Permit are impermissibly vague:

BMP: Reduce directly connected impervious surfaces in new developments and redevelopment projects by requiring that grassed swales or filter strips be installed along roadsides in lieu of curbs and gutters.

Measurable Goal: Directly connected impervious road surfaces in new developments and redevelopment areas will be reduced by 30 percent (relative to the traditional scenario in which curbs and gutters are used) over the course of the first permit term.

BMP: Incorporate the use of road salt alternatives for roadway deicing.

Measurable Goals: During the 1st year, reduce the amount of road salt

¹⁸ EPA, *Measurable Goals Guidance for Phase II Small MS4s: Part 2. Process for Developing Measurable Goals Under a General Permit*, available at <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part2.cfm>.

¹⁹ *Id.*

applied to roadways by 50% through the use of less-toxic alternatives, such as liquid calcium magnesium acetate (CMA).²⁰

In each of these cases, to constitute an adequately described BMP, EPA requires that a clear performance standard be linked with an activity.

Moreover, the State Water Board has agreed that such specific requirements are advisable, stating that, “[t]he addition of measurable standards for designing the BMPs provides additional guidance to developers and establishes a clear target for the development of the BMPs.” (SWRCB, Water Quality Order No. 2000-11, at 17.) By contrast, in the case of the Draft Permit’s site design requirements, there is no recommended or required activity, no measurable goal, no means of assessing BMP performance or progress, and no means of determining whether the BMP has achieved its purpose. As a result, the vaguely worded provisions in the Draft Permit fail to satisfy EPA regulations and guidance and are invalid under the Clean Water Act.

B. The Draft Permit’s Site Design Requirements Do Not Meet the Federally Required Maximum Extent Practicable (MEP) Standard.

1. The LID site design requirements in the Draft Permit are not sufficiently specific to constitute “controls” that meet the MEP standard and comply with federal law.

Substituting vagaries for BMPs in the Draft Permit runs directly against the regulatory requirement that the Regional Board, after reviewing the permit application, must actually set forth “permit conditions to reduce pollutants in discharges to the maximum extent practicable.” (40 C.F.R. § 122.26(d)(2)(iv).) Because the Draft Permit fails to do so with respect to site design, it consequently does not comply with the statutory obligation that every permit issued to a municipal discharger “shall require **controls** to reduce the discharge of pollutants to the maximum extent practicable. . . .” (33 U.S.C. § 1342(p)(3)(B)(iii) (emphasis added).) There is nothing that would support a finding of compliance, and the Draft Permit is, therefore, legally insufficient.

Even if it were presumed for the sake of argument that the Draft Permit’s provisions do constitute best management practices, the indefinite and conceptual character of these provisions precludes a determination that the “BMPs” at issue represent actual “controls” calibrated to the MEP standard. Indeed, the effectiveness of the open-ended requirements in the Draft Permit’s LID section cannot be assessed, as neither the Draft Permit nor the underlying record makes reasonably clear what specific actions are required and to what extent. These failings further disprove any assertion that Regional Board staff has carefully reviewed the provisions to ensure compliance with the

²⁰ EPA, *Phase II BMP & Measurable Goal Examples*, available at <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/ex5.cfm>; <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/ex6.cfm>.

MEP standard since no amount of expertise can evaluate the meaning and impact of such open-ended requirements.

The need for specificity is not only made clear by applicable regulatory and statutory provisions, but is also underscored in the legislative history of the Clean Water Act:

These are not permits in the normal sense we expect them to be. *These are actual programs.* These are permits that go far beyond the normal permits we would issue for an industry.²¹

The Draft Permit fails to live up to this standard and must be revised to include LID requirements that allow for compliance determinations and enforcement.

2. EPA objected to similarly vague language in another California MS4 permit, which was rejected by the overseeing Regional Board.

The provisions discussed above closely resemble sections of the South Orange County draft MS4 permit, which the San Diego Regional Board recently rejected after the Executive Officer stated that he doubted whether the permit would meet the MEP standard.²² Yet, in comparison, the South Orange County draft MS4 permit site design requirements were actually *more* detailed and specific than the Draft Permit here. That permit required the same or substantially similar site design BMPs as the Draft Permit and, *in addition*, required permittees to implement, where applicable and feasible, the following site design practices:

- Protect slopes and channels;
- Minimize soil compaction of permeable soils;
- Construct streets to the minimum widths necessary based on anticipated usage and public safety;
- Design parking lots to reduce the impervious land coverage of parking areas and to filter runoff before it reaches the storm drain system;
- Disconnect impervious surfaces through distributed pervious areas;
- Provide pervious area for parking and walking; and

²¹ Remarks of Sen. Stafford, 132 Cong.Rec. S32381 (Oct. 16, 1986) (emphasis added); see also 55 Fed. Reg. 47,990, at 48,038.

²² San Diego Regional Board hearing on adoption of MS4 permit for South Orange County (Feb. 13, 2008).

- Design the layout of buildings to reduce street length and preserve open space.²³

EPA's Region 9 office emphasized its concerns regarding the generality of the South Orange County permit in its comments to the San Diego Regional Board:

We recommend that the permit be revised to put more emphasis on LID.... To [do so], we recommend that the permit include provisions similar to Part 5.E.III.2 [which contains an EIA limitation, as discussed below] of the August 28, 2007 draft MS4 permit for Ventura County.... We also have concerns about the site design BMP requirements in the proposed permit.... Part[s] D.1.d.(4).(b).(ii) and (iii) have requirements for 'a portion' of impervious areas [to drain to pervious areas], and [for 'a portion' of] walkways and trails, etc. [to use pervious materials.] The term 'a portion' is vague and accordingly, we would recommend LID provisions similar to the draft Ventura County permit where more precise requirements would be developed.²⁴

At the adoption hearing for the South Orange County permit, EPA staff echoed their written comments and recommended that the San Diego Board not approve the permit and send it back to Regional Board staff for revisions. Regional Board members opted to do just that after the Board's Executive Officer expressed doubts as to whether the permit would meet the MEP standard. If the South Orange County permit failed for vagueness, there is no colorable argument that the San Francisco Bay Region Draft Permit meets the MEP standard.

3. The administrative record demonstrates that the LID provisions of the Draft Permit will not enable pollutant reduction to the maximum extent practicable.

The Fact Sheet reflects San Francisco Bay Regional Board staff's perspective that vague permit terms are ineffective and nearly impossible to enforce. Consequently, among staff's purported goals are: "Includ[ing] more specificity in NPDES Permit Order language and requirements[,] [c]reat[ing] ... a specific level of implementation for each action or set of actions.... [and] [i]ncorporat[ing] the Stormwater Management Plan level of detail and specificity into the Permit." (Fact Sheet/Rationale, Technical Report for Tentative Order No. R2-2008-00XX, NPDES Permit No. CAS612008, at 1 (hereinafter "Fact Sheet").) This is exactly what the Draft Permit fails to do, however. The LID provisions, as currently written, include almost no performance standards or specific

²³ San Diego Regional Water Quality Control Board, Tentative Order No. R9-2008-0001, NPDES Permit No. CAS0108740 ¶ D.1.d(4)(c).

²⁴ Email from E. Bromley, EPA Region 9, to J. Haas, San Diego Regional Water Quality Control Board (Jan. 24, 2008) (submitted with this letter as Attachment A).

controls against which Permittee compliance with the Draft Permit could be assessed. Rather, they are plagued by indeterminate language that does not allow for measurement, as discussed above: “minimize,” “drain a portion,” “construct a portion,” “to the extent feasible,” etc. (Draft Permit ¶ C.3.c.i(2).) As already mentioned, EPA has criticized provisions exactly like these for being unacceptably vague.²⁵ Nevertheless, except for the provisions concerning stormwater treatment systems, nothing in the LID section of the Draft Permit is associated with a measurable outcome.

The current language of the Draft Permit is not representative of a “balance between flexibility and enforceability,” which the Draft Permit claims to strike. (Fact Sheet at 4.) Instead, this section of the Draft Permit is far too flexible.²⁶ While the goals listed in the Fact Sheet are exactly on target—to make the permit requirements “known at the time of permit issuance” and to “establish[] the required actions, minimum implementation levels..., and specific reporting elements...” (*id.*)—sizing and performance criteria must be applied to a much more robust version of the LID requirements in order for the Permit to meet the MEP standard and to fulfill staff’s stated view on the level of detail required for an MS4 permit. Interestingly, the Fact Sheet highlights the problem that vagueness has generated for the Regional Board: “the lack of specific requirements and measurable outcomes” has made it “difficult to determine Permittees’ compliance with the current permits.” (Fact Sheet at 4.) Thus, the Board needs to act on its findings by revising the Draft Permit to include the “specific requirements and measurable outcomes” that are lacking.

In sum, the Draft Permit’s approach to site design (and to other matters, as set forth in Section IV, *infra*) mimics the approach that was previously proven ineffective. This approach grants to individual Permittees unbounded discretion to determine the extent of their implementation of stormwater management BMPs. Consequently, the Draft Permit itself does not include a set of controls that will reduce pollutants to the *maximum extent practicable*. (See *Defenders of Wildlife v. Babbitt*, 130 F.Supp.2d 121, 131 (D.D.C. 2001) (phrase “maximum extent practicable” “imposes a clear duty on the agency to fulfill the statutory command to the extent that it is feasible or possible”); *Rybachek v. U.S. EPA*, 904 F.2d 1276, 1289 (9th Cir. 1990) (term “practicable” in CWA has been defined as meaning that technology is required unless the costs are “wholly disproportionate” to pollution reduction benefits).) By including greater specificity and by creating enforceable performance standards, the Board can bring this section of the Draft Permit into compliance with Clean Water Act mandates.

²⁵ *Id.*

²⁶ “[F]lexibility should not be built into the program to such an extent that all municipalities do not face essentially the same responsibilities and commitment for achieving the goals of the CWA.” (55 Fed. Reg. at 48,038.)

4. The “alternative compliance” provisions of the New Development and Redevelopment section of the Draft Permit contain loopholes that would enable many projects to avoid implementation of the BMPs necessary for meeting the MEP standard.

The Draft Permit allows a number of developments to “provide alternative compliance” with the Draft Permit’s stormwater treatment provisions. (Draft Permit ¶ C.3.e.) The definition of what qualifies as “alternative compliance,” however, suffers from the same vagueness problems and lack of performance standards as the LID provisions. For example, infill projects of less than one acre and all redevelopment projects could avoid implementation of onsite stormwater management BMPs by either providing “Equivalent Offsite Treatment” or contributing “Equivalent Funds” to a “Regional Project.” (Draft Permit ¶ C.3.e (fn.2-5).) These options, however, are worded such that it is unclear what level of performance would be required. Furthermore, there is no guarantee that the alternative compliance projects would even prove effective at mitigating stormwater runoff and pollution since the Board does not appear to maintain any oversight of project implementation, and Regional Projects, specifically, would not need to be completed until three years after construction of the exempted development. Thus, an exempted development could pollute for three years without any mitigation (a major loophole unto itself), and the Regional Board and the public would have no way of judging whether the offsite mitigation project actually performed adequately until three years after the development had been built. These loopholes do not constitute pollution reduction to the maximum extent practicable.

The alternative compliance section also allows brownfield redevelopment projects, low-income housing, senior citizen housing, and transit-oriented developments to avoid hydraulic sizing criteria by “maximizing site design treatment controls.” This means only that these projects would have to implement at least one of four vaguely defined “site design and/or treatment measures” that are not required to meet any performance standards. (Draft Permit ¶ C.3.e (fn.1).) Like the provisions discussed above, there is no way to ensure that any of these alternative compliance options would be effective at reducing stormwater runoff and pollution—indeed, by explicitly waiving hydraulic sizing criteria, this section of the Draft Permit is almost certain to result in less than the federally mandated MEP standard of pollutant reduction. Yet there is nothing in the record to indicate why these particular projects should not have to comply with otherwise applicable federal law. Exemptions from BMP requirements should be granted only where compliance is truly infeasible and where alternative compliance can be proven effective.

C. The Draft Permit’s Site Design Requirements Will Not Ensure Compliance with Water Quality Standards.

Pursuant to federal regulations, “no permit may be issued” when “the imposition of conditions cannot *ensure* compliance with the applicable water quality requirements of all affected States.” (40 C.F.R. § 122.4(d) (*italics added*).) The word “ensure” is defined

as “to make certain or sure of.”²⁷ “Certain” is further defined as “definite”; “sure to happen”; and “established beyond question or doubt.”²⁸ In other words, permit conditions must make sure, or establish beyond question, that applicable water quality standards will be met. This requirement applies to the issuance of MS4 permits. In a precedential order, the State Water Resources Control Board elaborated on this requirement and determined that municipal stormwater permits must prohibit discharges of pollution that cause or contribute to the violation of water quality standards. (See State Water Resources Control Board WQ Order 2000-11.)

The provisions discussed above, which condition action based on “feasibility” or employ open-ended terms like “minimize” (see Draft Permit ¶ C.3.c.i(2)), fail to “establish beyond question or doubt” that water quality standards will be met. The administrative record likewise fails to establish how the Draft Permit will ensure compliance with water quality standards. The Draft Permit’s development-related conditions have not been calculated to protect water quality, nor do they come close to guaranteeing that water quality standards will be satisfied. This deficiency, which extends to other sections of the Draft Permit, as discussed below, independently violates the Clean Water Act. (See *In Re Government of the District of Columbia Municipal Separate Storm Sewer System*, 10 E.A.D. 323, 341-342 (BMPs that are “reasonably capable” of attaining water quality standards do not “appear to be entirely comparable to the concept of *ensuring* compliance”).)

Moreover, the fact that the Draft Permit does not include numeric effluent limitations means that best management practices must meet a higher threshold. (See *Communities for a Better Environment v. State Water Resources Control Board*, 109 Cal.App.4th 1089, 1105 (2003).) Vague provisions cannot substitute for numerical effluent limits. (See *Arizona Cattle Growers’ Ass’n v. U.S. Fish and Wildlife*, 273 F.3d 1229, 1250 (9th Cir. 2001) (“This vague analysis, however, cannot be what Congress contemplated when it anticipated that surrogate indices might be used in place of specific numbers.”).)

D. To Meet the MEP Standard and Water Quality Objectives, the Draft Permit Should Adopt a 3% Maximum Allowable Effective Impervious Area Limitation.

In prior comment letters, NRDC urged the Board to adopt a standard of 3% maximum allowable Effective Impervious Area (EIA) in all new development and redevelopment projects. At our meeting with Board staff in January, staff outlined their concerns regarding the implementation of an EIA standard. Staff also provided us with a comprehensive list of comments on Dr. Horner’s reports. We sent these comments to Dr.

²⁷ Webster’s II New College Dictionary (Houghton Mifflin Co. 1995).

²⁸ *Id.*

Horner, and he replied with an explanation of the technical bases for his reports, addressing staff's comments and providing additional support for his conclusions.²⁹

1. A 3% maximum allowable EIA limitation will generate the most significant water quality benefits for the San Francisco Bay area, enabling the Draft Permit's LID provisions to meet the MEP standard.

Substantial evidence in the record demonstrates that a 3% EIA standard will result in superior pollutant reduction compared to the provisions in the Draft Permit. As referenced in our July 12, 2007, comment letter to the Regional Board, Dr. Horner's first technical report (concerning A, B, and C soils) shows that in five out of six case studies, the 3% maximum EIA approach results the elimination of *all* stormwater discharge under expected meteorological conditions.³⁰ Therefore, as he concluded, "pollutant additions to receiving waters would also be eliminated."³¹ Dr. Horner's second technical report shows that even in areas with D soils that lack significant infiltrative capacity, total runoff could be reduced by 40% to 79% at a variety of developments, an enormous improvement over conventional BMPs. LID techniques also enable higher reductions of pollutant loads even in D soil areas.³²

Developments utilizing LID BMPs have borne out the ability of LID practices to mitigate stormwater runoff and pollutant loading better than other techniques. At a site studied by EPA in Prince George's County, Maryland, a development that implemented LID designs created less runoff, and that runoff contained 36% less copper, 21% less lead, and 37% less zinc compared to runoff from conventional sites.³³ By contrast, the Draft Permit could allow for nearly all pollutant loading to be discharged through conventional "treat and release" BMPs which, Dr. Horner has demonstrated, do not even approximate the performance of an EIA approach. When LID requirements are paired with a 3% EIA limitation, a winning combination results: the most effective BMPs are implemented to a level that ensures the non-degradation of watersheds.

²⁹ Letter from R. Horner to B. Wolfe (Feb. 15, 2008) (submitted with this letter as Attachment B).

³⁰ Horner, R., *Initial Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices ("LID") for the San Francisco Bay Area* (2007), at 15, 19-20.

³¹ *Id.* at 20.

³² Horner, R., *Supplementary Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices ("LID") for the San Francisco Bay Area* (2007), at 5.

³³ EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (2007), at 24.

2. Scientific studies of watersheds and real-world implementation of LID site designs have demonstrated how total impervious cover above 3% harms ecosystems and how LID can mitigate the detrimental impacts of stormwater runoff.

Not only does a 3% EIA standard result in both superior and practicable pollution control, thus making it consistent with the MEP standard, but a multitude of studies also supports the 3% standard as the threshold above which water quality degradation occurs. Indeed, adverse effects are already pronounced when impervious cover reaches 5%,³⁴ and small changes in imperviousness can make a significant difference. As mentioned above, a recent study in the East San Francisco Bay Hills determined that minor increases in imperviousness (approximately 1%) can generate peak flow increases for early season storms up to an order of magnitude above normal.³⁵ Studies in the mid-Atlantic region show that changes in the biotic community of streams emerge when impervious surface is greater than approximately 3% of the watershed.³⁶ In Connecticut, it is believed that a fairly low impervious cover level of approximately 3% is “a key reason” why the Eightmile River Watershed is still an intact and functioning ecosystem.³⁷ A study from the Northwest demonstrates that as impervious cover exceeds 3.5%, there is a “significant increase in water level fluctuation, conductivity, fecal coliform bacteria, and total phosphorus in urban wetlands.”³⁸ A study in the Northeast United States revealed a

³⁴ R. Horner, *Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices (“LID”) for Ventura County, Justification of Proposed Effective Impervious Area Limitation*, Attachment A, at A-2.

³⁵ Brown, S., et al., “Urban Effects on Stream Hydrology and Geomorphology: Variations, Magnitudes and Implications for Stream Protection and Restoration,” presented at the American Geophysical Union’s Fall Meeting 2007, abstract #H52D-01.

³⁶ Marshall, E. et. al., *Urban Development Impacts on Ecosystems* (2005), at 66, available at http://www.asc.psu.edu/public/pubs/Articles/marshall_Chapter%207.pdf.

³⁷ Eight Mile River Watershed Management Plan, at Appendix 9(i) (also noting that other studies find that impervious cover levels as low as 4-5% in a watershed can cause aquatic ecosystems to begin to degrade) (citing U.S. Geological Survey, *The Effects of Urbanization on the Biological, Physical and Chemical Characteristics of Coastal New England Streams* (2004)), available at http://www.eightmileriver.org/resources/digital_library/appendicies/09e1_mgmt_issue_3_imperv.pdf; <http://pubs.usgs.gov/pp/pp1695/>.

³⁸ Taylor, B., K. Ludwa, and R. Horner, *Urbanization Effects on Wetland Hydrology and Water Quality; Proceedings of the Third Puget Sound Research Meeting*, Puget Sound Water Quality Authority, Olympia, WA (1995).

“threshold potentially existing between 2.4% and 5.1% impervious surface cover.”³⁹ An Ohio study recorded declining biological integrity at levels of total urban land use as low as 4% and noted that this result is similar to other studies in North America.⁴⁰ An analysis based on streams in Ventura and Orange Counties “estimated a threshold of response at a two to three percent change in impervious cover in a watershed.”⁴¹ Fish and Wildlife studies revealed that drainage areas with impervious cover of greater than 5% may be “detrimental to salamander habitats.”⁴² In another study, “four species [of aquatic salamanders] were never found in watersheds with more than 3[%] impervious surface.”⁴³

3. The draft Ventura County MS4 permit has adopted an EIA limitation, and nothing in the record shows that implementation of an EIA limitation in the San Francisco Bay area would be infeasible or that another performance measure would meet the MEP standard.

Beyond the technical reports by Dr. Horner—showing that the 3% maximum EIA approach is feasible, practicable, and cost-effective, and can result in as much as 100% runoff capture onsite⁴⁴—the approach we recommend has been advocated by EPA, as noted above, and taken by the L.A. Regional Water Board in the draft MS4 permit for Ventura County. (Draft NPDES Permit No. CAS004002 (requiring all New

³⁹ Conway, T., *Impervious Surface As an Indicator of pH and Specific Conductance in the Urbanizing Coastal Zone of New Jersey, USA*, 85 Journal of Environmental Management, 308-316, at 314 (2007).

⁴⁰ Miltner, R. et al., *Fish Community Response in a Rapidly Suburbanizing Landscape*, at 253-54, presented at EPA conference titled *Urban Stormwater: Enhancing Programs at the Local Level* (2003), available at <http://www.epa.gov/owow/nps/natlstormwater03/24Miltner.pdf>.

⁴¹ Coleman, D. et. al., *Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams*, SCCWRP Technical Report #450 (2005). While more sensitive than other regions’ streams, the data for southern California streams “form[] a relationship very similar in shape to the enlargement curves developed for other North American streams.” (Coleman (2005), at iv.)

⁴² 72 Fed. Reg. 71,040 at 71,045 (Dec. 13, 2007).

⁴³ Karl Blankenship, *Findings of the Maryland Biological Stream Survey*, Alliance for the Chesapeake Bay, Bay Journal (2000), available at <http://www.bayjournal.com/article.cfm?article=1856>.

⁴⁴ Concerns about sites where LID is particularly difficult to implement are misplaced; a carefully crafted waiver provision could address these rare situations, and every site could implement at least some LID practices.

Development and Redevelopment Projects to reduce the percentage of Effective Impervious Area to less than 5% of total project area).) This information—as well as the myriad articles and reports demonstrating the superiority of LID submitted into the record by NRDC—supports the finding that limiting EIA to 3% for Regulated Projects is the most effective and feasible performance standard. Yet the Draft Permit, instead of aiming for success, is an example of the “prevailing problem [] that the current construct of many stormwater regulations do[es] not require the use of the best available technologies.”⁴⁵

MEP means choosing the most effective BMPs; potentially applicable, effective BMPs (such as LID) may be rejected only where the alternative BMPs will serve the same purpose or where the rejected BMPs are technically infeasible or cost-prohibitive. Here, the documentation provided in the Fact Sheet does not demonstrate technical infeasibility or cost-prohibitiveness, nor does it explain how the weak requirements set forth in the Draft Permit could possibly ensure the same water quality benefits as imposing a 3% EIA limitation. The Draft Permit is, consequently, legally inadequate and unapprovable. This inadequacy in the Draft Permit’s LID section can, however, be remedied without much difficulty. To protect biological productivity, physical habitat, and other beneficial uses, effective impervious area should simply be capped at *no more than three percent*.⁴⁶ As it stands now, the failure to require adequate LID BMPs with this EIA limitation means that the Draft Permit currently fails to meet the MEP standard.

E. At a Minimum, the Draft Permit Must Include an Objective Performance Standard.

Even assuming, contrary to the evidence in the record, that the Regional Board could lawfully omit a 3% EIA limitation for new development and redevelopment projects, the wholesale omission of *any* articulated standard is unlawful and inconsistent with the MEP standard. Indeed, in addition to the legal flaws that vagueness introduces, as discussed above, with respect to site design the Draft Permit follows an approach that has been criticized in a recent publication released by the State Water Resources Control Board on this very subject. This December 2007 report emphasizes the role of performance standards and observes that language quite similar to that used in the Draft Permit does not specify a “level of compliance.”⁴⁷ Stormwater expert Dr. Horner—currently a member of a National Academy of Sciences panel on controlling urban

⁴⁵ State Water Resources Control Board, *A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption* (2007), at 10.

⁴⁶ R. Horner, *Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices (“LID”) for Ventura County, Justification of Proposed Effective Impervious Area Limitation*, Attachment A, at A-1 (emphasis added).

⁴⁷ State Water Resources Control Board, *A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption* (2007), at 4.

runoff—has similarly stated that the failure to include an objective performance standard makes the effectiveness of the Draft Permit entirely unknowable:

In my experience, a critical element of any successful program to implement LID and hydromodification in a NPDES MS4 permit context is the specification of a clear performance standard. . . . Based on the Draft Permit language regarding LID, and based on my experience in the field, I am unable to discern what level of performance (and concomitant beneficial water resources impact) will result from these provisions, as proposed.⁴⁸

EPA Region 9, through both its comments on the South Orange County MS4 Permit and its criticism of the failure of the Monterey Region SWMP to “target identified priorities or establish measurable goals,” has also indicated that clear performance standards in MS4 permits are critically important.⁴⁹ Furthermore, the findings in the Fact Sheet do not support the Draft Permit’s failure to include objective performance standards. Notably, as mentioned above, Regional Board staff criticize the lack of specificity in previous permits because it hampers determinations of permit compliance. (Fact Sheet at 4.) Thus, the Draft Permit must be revised to contain specific, binding, measurable goals.

F. The Draft Permit’s Apparent Elimination of Stormwater Management Plans and Lack of Clear Control Measures Preclude Meaningful Review by the Board and Public.

The failure to include an objective performance standard or clear requirements for LID practices violates the Clean Water Act by precluding required agency and public review of permit conditions. Currently, the Draft Permit does not contain sufficient substance for the Board or the public to determine what developers will in fact be required to do. This shortcoming is compounded by the Draft Permit’s apparent elimination of the requirement that Permittees must submit for Board approval Stormwater Management Plans (“SWMPs”) that implement specific BMPs and control measures. While some other MS4 permits have relied on SWMPs as a source of robust, substantive development standards, the Draft Permit purports to include sufficient detail such that SWMPs will no longer be necessary. According to the Fact Sheet, one of the principal goals of the Draft Permit is to “[i]ncorporate the Stormwater Management Plan level of detail and specificity into the Permit.” (Fact Sheet at 1.) The Draft Permit supposedly “merg[es] the Permittees’ stormwater management plans into the permit in one document.” (Fact Sheet at 5.) Including the level of detail from a SWMP in the MS4

⁴⁸ Letter from R. Horner to B. Wolfe (Feb. 15, 2008), at 8.

⁴⁹ Letter from A. Strauss to R. Briggs (Feb. 8, 2006).

permit itself is a worthwhile goal but is in no way achieved in the Draft Permit, as explained below.⁵⁰

1. The Draft Permit does not contain Stormwater Management Plan-level detail, contrary to the Fact Sheet's assertions.

The Fact Sheet states that the “set of specific actions [required by the Permit] is equivalent to the requirements that in past permit cycles were included in a separate stormwater management plan for each Permittee or countywide group of Permittees.” (Fact Sheet at 5.) Yet comparison of the Draft Permit to the San Diego MS4 Permit and to MS4 permits currently in effect around the Bay area belies this claim. Concerning restrictions on development, the Draft Permit is, in several respects, even *less specific* than other MS4 permits that (unlike the Draft Permit) require Stormwater Management Plans.

The San Diego Regional Board approved a new MS4 permit for San Diego County in 2007 (NPDES Permit No. CAS0108758; hereinafter “San Diego MS4 Permit”). The LID section of that permit is generally either as stringent as, or more stringent than, the Draft Permit. In fact, while the San Diego MS4 Permit contains all of the LID site design requirements included in the Draft Permit, it also contains several additional requirements, such as: “[m]inimiz[ing] soil compaction;” “[c]onstruct[ing] streets, sidewalks, or parking lot aisles to the minimum widths necessary;” and ensuring that “[t]he amount of runoff from impervious areas that is to drain to pervious areas shall correspond with the total capacity of the project’s pervious areas to infiltrate or treat runoff.” (San Diego MS4 Permit ¶ D.1.d(4).) Nonetheless, San Diego’s permit also mandates the implementation of a Stormwater Management Plan that must include more specific BMP requirements than the permit itself. (San Diego MS4 Permit ¶ D.1.d(8).)

The SWMP-level details required by the San Diego permit highlight how much is missing from the Draft Permit. The San Diego permit mandates that Permittees develop a Model Standard Urban Stormwater Mitigation Plan (SUSMP) that sets forth specific criteria for BMPs, including:

Establishment of siting, design, and maintenance criteria for each LID and treatment control BMP listed in the Model SUSMP, so that implemented LID and treatment control BMPs are constructed correctly and are effective at pollutant removal and/or runoff control. LID techniques, such as soil amendments, shall be incorporated into the criteria for appropriate treatment control BMPs.⁵¹

⁵⁰ It is somewhat perplexing that the Draft Permit foregoes the SWMP requirement, given that the Fact Sheet acknowledges that “Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits.” (Fact Sheet at 1.)

⁵¹ San Diego MS4 Permit ¶ D.1.d(8)(a)(4).

The Draft Permit contains nothing that approaches this level of detail. If San Diego's permit itself includes more detail than the Draft Permit *and* requires Stormwater Management Plans to go much further, as the quote above shows, it is legally untenable to argue that the Draft Permit contains anything close to SWMP-level detail.

Within the San Francisco Bay area, previous MS4 permits themselves contained more SWMP-level detail than the Draft Permit, and these old permits additionally required the implementation of SWMPs. Specifically, Alameda County's and Fairfield-Suisun's current MS4 permits, which were issued by this Regional Board in February 2003 (NPDES Permit No. CAS0029831 and NPDES Permit No. CAS612005, respectively, hereinafter "Alameda County MS4 Permit" and "Fairfield-Suisun MS4 Permit"), both contain an extensive list of LID site design practices that were given as examples of issues to be addressed in SWMPs:

- Minimize land disturbance;
- Minimize impervious surfaces (e.g., roadway width, driveway area, and parking lot area), especially directly connected impervious areas;
- Minimum-impact street design standards for new development and redevelopment, including typical specifications (e.g., neo-traditional street design standards and/or street standards recently revised in other cities, including Portland, Oregon, and Vancouver, British Columbia);
- Minimum-impact parking lot design standards, including parking space maximization within a given area, use of landscaping as a stormwater drainage feature, use of pervious pavements, and parking maxima;
- Clustering of structures and pavement;
- Typical specifications or "acceptable design" guidelines for lot-level design measures, including:
- Disconnected roof downspouts to splash blocks or "bubble-ups;"
- Alternate driveway standards (e.g., wheelways, unit pavers, or other pervious pavements); and,
- Microdetention, including landscape detention and use of cisterns.
- Preservation of high-quality open space;
- Maintenance and/or restoration of riparian areas and wetlands as project amenities, including establishing vegetated buffer zones to reduce runoff into waterways, allow for stream channel change as a stream's contributing watershed urbanizes, and otherwise mitigate the effects of urban runoff on waters and beneficial uses of waters (may also be considered treatment measures); and,
- Incorporation of supplemental controls to minimize changes in the volume, flow rate, timing, and duration of runoff, for a given precipitation event or

events. These changes include cumulative hydromodification caused by site development. Measures may include landscape-based measures or other features to reduce the velocity of, detain, and/or infiltrate stormwater runoff (may also be considered treatment measures).⁵²

Thus, even these relatively more detailed LID provisions were not considered SWMP-level details by this very Board. Overall, comparisons to these two Bay area permits and to the San Diego permit underscore the inadequacy of the Draft Permit and the fallacy of the assertion that it contains sufficiently detailed control measures: all three other permits contain more specific descriptions of LID site design *and* obligate Permittees to implement even more specific SWMPs.

2. The Draft Permit's vagueness and lack of detail prevent the Board and the public from determining whether the Permit will reduce pollution to the maximum extent practicable.

The failure to include an objective performance standard or clear and detailed requirements for LID in either the Draft Permit or a SWMP violates the Clean Water Act by precluding required agency and public review of permit conditions. The Ninth Circuit, too, has emphasized that a SWMP, which “contain[s] the substantive information about how the operator of a small MS4 will reduce discharges to the maximum extent practicable,” is an inherent part of the MS4 permit. (*Environmental Defense Center v. EPA*, 344 F.3d 832, 857-58 (9th Cir. 2003) (“*EDC*”); *see also Waterkeeper Alliance v. U.S. EPA*, 399 F.3d 486, 500 (2d Cir. 2005).) Thus, meaningful review means *ensuring* that the MS4 permits are in fact designed to reduce pollutants in stormwater to the MEP standard. (33 U.S.C. § 1342(b) (States are allowed to issue NPDES permits only where, *inter alia*, the state permitting programs “*apply, and insure compliance with, any applicable [effluent limitations and standards].*”) (emphasis added).) Especially where a Regional Board eliminates the requirement for a SWMP, as apparently proposed in the Draft Permit, the permit itself must contain considerable detail in order to enable meaningful review at the permit approval stage. Without this regulatory oversight to ensure that the program contains specificity to meet legal requirements, the program amounts to “impermissible self-regulation.” (*EDC*, 344 F.3d at 843.)

Here, the combination of vague permit terms that do not meet the MEP standard, compounded by the failure to require further detail in a SWMP, amounts to the *de facto* creation of an impermissible self-regulatory program. There is nothing to stop a Copermittee from “misunderstanding or misrepresenting its own stormwater situation and proposing a set of minimum measures for itself that would reduce discharges by far less than the maximum extent practicable.” (*EDC*, 344 F.3d at 855.) Indeed, a Permittee could, for instance, comply with Draft Permit ¶¶ C.3.c.i(2)(d) by requiring that 2% of

⁵² Alameda County MS4 Permit ¶¶ C.3.b & C.3.j; and Fairfield-Suisun MS4 Permit ¶¶ C.3.b & C.3.j.

impervious surfaces drain to pervious areas—this would hardly constitute pollutant reduction to the “maximum extent practicable,” but it would satisfy the terms of the Permit, nonetheless. It is precisely to prevent this type of problem that *EDC* and *Waterkeeper Alliance* require the Regional Board itself to ensure that the Draft Permit contains objective performance standards and the level of detail necessary to reduce pollutants in actuality to the maximum extent practicable. As currently written, it would be impossible for the Board to conclude that the Draft Permit meets the MEP standard.

III. The Hydromodification Provision Fails to Take Adequate Account of Infill and Redevelopment Projects.

The Draft Permit’s hydromodification standard requires that “[i]ncreases in runoff flow and volume [] be managed so that post-project runoff shall not exceed estimated *pre-project* rates and durations...” (Draft Permit ¶ C.3.g.ii. (emphasis added).) This standard is acceptable for new development on land that has remained in its natural state until the time of construction, but it is wholly unacceptable for infill and redevelopment projects where the land has already been developed. Because of the prevalence of now-antiquated stormwater management practices that focused on peak flow and not on matching discharge rates and durations, *pre-project* rates and durations for infill and redevelopment sites will almost always represent measurements that we now want to avoid. Imagine, for example, the redevelopment of a 1950s-era surface parking lot: under the Draft Permit’s standard, a developer could comply with the Permit by doing essentially nothing to mitigate the effects of hydromodification—after all, a parking lot constructed in the 1950s would shunt all runoff directly to storm drains as rapidly as possible, resulting in the early, high peak flows that are at the root of the hydromodification problem. Nonetheless, this unnatural hydrograph would be the standard against which the new project would be measured.

Instead of requiring Hydromodification Management Projects (“HM Projects”) not to exceed *pre-project* runoff rates and durations, the Draft Permit should require HM Projects not to exceed *pre-development* runoff rates and durations. This will ensure that hydromodification standards result in measurable progress and water quality benefits, rather than the institutionalization of detrimental, antiquated stormwater management practices. The Ventura County draft MS4 permit is taking this approach: “The purpose of the hydrologic controls is to minimize changes in post-development hydrologic storm water runoff discharge rates, velocities, and duration. This shall be achieved by maintaining the project’s *pre-development* storm water runoff flow rates and durations.”⁵³ Los Angeles County has also proposed a similar standard: “Minimize hydromodification such that the post-developed urban and stormwater runoff rates and volumes match *undeveloped* conditions in any storm event up to and including the 50 year capital design

⁵³ Los Angeles Regional Water Quality Control Board, Order No. 08-xxx, NPDES Permit No. CAS004002 ¶ 5.E.III.3(a) (emphasis added).

storm event.”⁵⁴ The Southern California Coastal Water Research Project suggests that “attempting to have the post-development condition match *pre-development* runoff magnitude and duration should be an initial consideration for all circumstances.”⁵⁵ Given these precedents, we believe that matching pre-development runoff flows and durations is required to meet the MEP standard. Indeed, Dr. Horner recommends the following standard for the Draft Permit:

*Post-development peak flow rates and volumes shall not exceed the modeled peak flow rates and volumes of pre-European-settlement native land cover for all storms from the channel-forming event to the 100-year frequency stream flow.*⁵⁶

Once the hydromodification standard has been appropriately revised, the Board must remember that the hydromodification standard should complement the LID provisions—it cannot substitute for them. Hydromodification standards seek to mitigate the adverse impacts of changes in runoff rates and volumes resulting from development. They do not specify a reduction in the overall pollutant loading of stormwater runoff and cannot guarantee the same water quality benefits as LID; the principle impacts of concern are erosion and silt generation. Even if a new development project’s hydrograph perfectly matched the pre-development hydrograph, runoff from the site could still carry enormous quantities of manmade toxic pollution, although it might meet a stringent hydromodification standard. LID site design and performance standards, on the other hand, directly address the adverse impacts of pollutant loading. But, the benefit of robust LID requirements is that they have the potential to accomplish hydromodification objectives, as well as pollutant reduction goals. As we have described above, full LID implementation can in many instances eliminate stormwater runoff entirely, thus preventing adverse hydromodification *and* pollution of receiving waters. For this reason, even when the hydromodification standard of the Draft Permit is strengthened as needed, the weak LID provisions will remain a major concern that needs to be addressed.

IV. Other Permit Provisions Suffer the Same Flaws as the LID Requirements in the New Development and Redevelopment Section.

The impermissible vagueness that characterizes the LID site design requirements is not limited to this section of the Draft Permit; the problem manifests itself throughout other critical areas of the document, too. Each of the legal problems identified above,

⁵⁴ Los Angeles County Department of Regional Planning, Draft LID Ordinance (Jan. 10, 2008), amending Los Angeles County Code § 12.84.440 (emphasis added).

⁵⁵ SCCWRP, *Managing Runoff to Protect Natural Streams: the Latest Developments on Investigation and Management of Hydromodification in California* (Dec. 2005), at 11 (emphasis added).

⁵⁶ Letter from R. Horner to B. Wolfe (Feb. 15, 2008), at 9.

therefore, applies and is incorporated by reference here. Examples of problematic sections include:

- Street and Road Repair and Maintenance⁵⁷
 - Permittees must develop and implement “appropriate BMPs” to control debris and waste materials, and must “require proper management” of materials in order to “avoid discharge to storm drains.”
- Bridge and Structure Maintenance and Graffiti Removal⁵⁸
- Rural Public Works Construction and Maintenance⁵⁹
- Minimum Required Management Practices for Construction Site Control⁶⁰
 - Among other provisions, Permittees must implement BMPs that include: “[m]inimization of areas that are cleared and graded” to only that area necessary for active construction; “[m]inimization of exposure time” of areas of disturbed soil; “[p]reservation and protection of natural hydrologic features, riparian buffers, and corridors”; “[e]rosion prevention”; revegetation or landscaping “as early as feasible”; and implementation of advanced treatment for sediment removal, “if necessary,” at sites that *the Permittee determines* to be “an exceptional threat to water quality.”
- Adopt an Integrated Pest Management (IPM) Policy or Ordinance⁶¹
 - As a pesticide toxicity control measure, Permittees are required include provisions that “minimize reliance on pesticides that threaten water quality.”
- Development of a Risk Reduction Plan Implemented Throughout the Region⁶²
- Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, During Construction, and Post-Construction⁶³

⁵⁷ Draft Permit ¶¶ C.2.c.i; C.2.c.ii

⁵⁸ Draft Permit ¶ C.2.e.i.

⁵⁹ Draft Permit ¶ C.2.h.

⁶⁰ Draft Permit ¶¶ C.6.c.i; C.6.c.ii (emphasis added?).

⁶¹ Draft Permit ¶ C.9.a.

⁶² Draft Permit ¶ C.12.i.

⁶³ Draft Permit ¶ C.13.a.

- Permittees are required to develop BMPs “on how to manage the waste during and post-construction” and “require use of appropriate BMPs” for any building permits issued.
- Copper Controls for Industrial Sources⁶⁴

In many instances, the Draft Permit essentially directs the Permittees to develop their own permit, which will not be subject to public review or Board oversight. Further, the lack of performance standards and compliance measures could render these provisions useless if and when the Regional Board or the public ever needs to enforce them. Without a clear understanding of exactly what these sections require of the Permittees, the Board cannot determine that they result in the reduction of pollutants to the maximum extent practicable.

V. The Draft Permit Fails to Incorporate More Stringent Provisions Included in Other MS4 Permits in California, and This Prevents the Draft Permit from Meeting the MEP Standard.

The State Water Board has explained that “MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive.”⁶⁵ Where other California Phase I permits have included provisions that represent the MEP standard, the Draft Permit’s failure to include those same provisions raises a presumption that the Draft Permit does not meet the MEP standard, unless it can be shown that those provisions would not be technically feasible or that the cost would be prohibitive. Yet, as shown above and below, the Draft Permit fails to include technically feasible, cost-effective provisions that are standard in other permits.

As discussed previously, the latest draft of Ventura County’s MS4 permit includes a maximum allowable Effective Impervious Area limitation of 5%. Although lower than our recommended 3% limitation, a numeric EIA standard represents state-of-the-art stormwater management science and the MEP standard, which we have demonstrated to this Regional Board in the two aforementioned reports by Dr. Horner. Beyond the issue of numeric standards, the Draft Permit contains additional weaknesses in comparison to other California Phase I permits. For example, San Diego’s MS4 permit sets a regulated project threshold of 5,000 square feet. Under San Diego’s permit, redevelopment projects, restaurants, hillside developments, parking lots, road projects, and retail gasoline outlets creating at least 5,000 square feet of impervious surface must implement the required LID BMPs. (San Diego MS4 Permit ¶ D.1.d(1)-(2).) The latest draft of Ventura County’s new MS4 permit also uses the 5,000 square-foot threshold. The Draft

⁶⁴ Draft Permit ¶ C.13.d.

⁶⁵ SWRCB Water Quality Order No. 2000-11, at 20.

Permit, on the other hand, applies a 10,000 square-foot threshold.⁶⁶ (Draft Permit ¶ C.3.b.i.) If the San Diego Regional Board has already set a lower threshold in an approved permit, and if the L.A. Regional Board is poised to do so in its Ventura County permit, how can the Draft Permit's threshold, which is twice as high, constitute the MEP standard? The answer is, it cannot. There is nothing about the San Francisco Bay area that makes a 5,000 square-foot threshold infeasible while the same threshold is currently being implemented in San Diego County and will likely soon be implemented in Ventura County. The Draft Permit's Regulated Projects definition must, therefore, encompass projects down to 5,000 square feet in order to meet the MEP standard.

In some cases, however, even a 5,000 square-foot threshold is too large. The San Diego MS4 Permit, for instance, regulates projects in environmentally sensitive areas that either create 2,500 square feet of impervious surface or increase the total impervious area to more than 10% of its naturally occurring condition. (San Diego MS4 Permit ¶ D.1.d(2).) Ventura County's latest draft MS4 permit includes a similar provision. The San Francisco Bay Region Draft Permit, however, contains no such provision. Additionally, the Draft Permit applies a 5,000 square-foot impervious threshold to detached single-family homes, although very few homes—even many “McMansions”—are likely to qualify under this standard.⁶⁷ Consequently, because the threshold is set so high, the detached single-family home provisions are effectively meaningless, even though it would be feasible to implement LID at much smaller home sites.

As the Draft Permit fails to require feasible, cost-effective, applicable BMPs and performance measures that are being adopted in other California stormwater permits, these critical omissions mean that the Draft Permit clearly fails to meet the MEP standard.

⁶⁶ This threshold will decrease to 5,000 square feet in 2010, but only for a very limited set of projects. Further, we do not understand why the previous draft of the permit would have applied the reduction to all Regulated Projects, while the latest draft has restricted the reduction's scope to a small subset of developments.

⁶⁷ A simple example demonstrates the problem. The following luxury home in Hayward, CA, (within the Draft Permit's jurisdiction) would *not* meet the Draft Permit's threshold: a 5,050 square-foot, two-storey residence (ground floor encompasses approximately 3,050 square feet, including garage bays) with 6 bedrooms, 5½ bathrooms, and 3 garage spaces. This assumes a medium-length driveway (approximately 1,750 square feet, allowing for a turn-around area of 30ft. by 25ft. and a 50ft. connector to the main road). Floor plan available at http://www.tollbrothers.com/homesearch/servlet/HomeSearch?app=model_description&plan_id=34026.

Executive Officer and Members of the Board

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VI. Conclusion

As these comments indicate, the Draft Permit requires significant improvements before it is ready to be approved, and NRDC and San Francisco Baykeeper are strongly opposed to approval of the Draft Permit in its current form. We would welcome a continuing discussion with staff regarding changes to the Draft Permit that would allow us to support it. Please feel free to contact us at 310-434-2300.

Sincerely,

David S. Beckman
Bart Lounsbury
Natural Resources Defense Council

cc: Alexis Strauss, Director, Water Division, EPA Region 9